

favor extensive angular momentum loss by stars, still on the main sequence, that formed at initial separations of at least ten times their sizes (T. Rahunen and O. Vilhu, E. I. Popova *et al.*, L. Milano *et al.*, F. van't Veer), but this may be largely a function of who happened to attend the conference. The most unusual suggestion is undoubtedly that of Z. Kopal, who proposes that the W Ursae stars are really single stars, temporarily simulating binaries!

Most of these points and others addressed in the volume are unlikely to change much our basic understanding of stellar evolution or binary systems. Thus this book is not really a "must buy" for general science libraries, though many of them seem to have standing orders for the series to which it belongs.

VIRGINIA TRIMBLE

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The Buildup of CO₂

Carbon Dioxide Review 1982. WILLIAM C. CLARK, Ed. Clarendon (Oxford University Press), New York, 1982. xx, 470 pp., illus., + loose map. \$35.

This massive and expensively produced volume, printed on high-quality paper no more than 60 percent covered by text, is a multiauthor review of the carbon dioxide buildup in the atmosphere, as things seem in 1982. For the readers of *Science* no more useful account is available. Specialists will have seen much of the material before, though some of it is being published for the first time. All the writers write with the special enthusiasm that for a few years attaches to each new controversy. The list of writers includes Roger Revelle, who with his colleagues at La Jolla was the instigator 25 years ago of the present surge of interest. Today, if we can trust this volume, the buildup of CO₂ is unmistakably real, and the problem is attracting more interest than ever, from the media as well as from the scientific community.

Papers by Robert E. Dickinson and Charles F. Baes, on modeling the climatic response to the buildup and on the role of ocean chemistry, are excellent summaries of present knowledge. Dickinson reduces what is usually seen as a complex problem in three-dimensional modeling to a series of well-thought-out

statements of simple physical process. Any scientist could follow him, and I for one am grateful for his account. Baes discusses a medium where large-scale modeling is difficult and where a qualitative grasp of the essential chemistry is a prerequisite to progress. He deals at length with the role of plankton in holding total carbon in surface waters well below the levels that a lifeless and well-mixed ocean would display. If this biotic sink did not exist atmospheric CO₂ pressures would rise strongly, perhaps to three times present levels. Climatologists are used to thinking of the ocean as a sink for CO₂; about half the CO₂ added to the atmosphere disappears, presumably into the ocean. If Baes's analysis is correct, there would be a strong reverse flow if anything happened to reduce the productivity of the plankton. This is a feedback that few climatologists are much aware of.

What emerges from the book in spite of these pellucid essays is a mass of uncertainty. The buildup of CO₂ is a reality, monitored with increasing precision since 1957 and inferred for much earlier dates. A statistical section gives the monitored values to 1980, as well as a review of a long series of measurements made at Mauna Loa by the pioneers of such monitoring, Charles D. Keeling, Robert B. Bacastow, and Timothy P. Whorf. There the confidence ends. The volume is a long litany of uncertainties—of the internal transport processes in the ocean, of ocean-atmosphere interaction, of the magnitude of forest and soil carbon wastage, of the future course of fossil-fuel consumption. Yet something else emerges, too: *if* (the most frequent word in the book) the CO₂ buildup continues, *if* the big general circulation models are right about its impact on climate, and *if* we have not miscalculated the potential role of the oceans, then we face a climatic change in the next century and a half like nothing the post-glacial world, and hence civilized humanity, has seen.

Late in the volume Charles F. Cooper tries to assess what such a change might mean for society. With the commentators on his paper (Sylvan H. Wittwer, Norman J. Rosenberg, and Peter A. Oram) he appears to think that CO₂ buildup implies large economic, social, and political impacts but not necessarily disaster. In fact the direct impact on crops and forest growth may be positive, allowing for technological adaptation. The common prejudice that all environmental change is bad is absent. No firm conclusion is reached, however; and on present evidence none is possible.

Three world agencies—the World Meteorological Organization, the United Nations Environment Programme, and the International Council of Scientific Unions—have the issue of CO₂ buildup on their agendas, because many individuals and even nations see it as a threat to their security. A consensus on possible world action is to be attempted in 1985. Those involved will have to take this volume very much into account.

F. K. HARE

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Books Received

Advances in Irrigation. Vol. 1. Daniel Hillel, Ed. Academic Press, New York, 1982. xx, 302 pp., illus. \$37.50.

Advances in Organometallic Chemistry. Vol. 20. F. G. A. Stone and Robert West, Eds. Academic Press, New York, 1982. x, 370 pp., illus. \$56.

Alternative Wastewater Treatment. Low-Cost Small Systems, Research and Development. Proceedings of a conference, Oslo, Sept. 1981. Arild Schanke Eikum and Robert W. Seabloom, Eds. Reidel, Boston, 1982 (distributor, Kluwer Boston, Hingham, Mass.). x, 350 pp., illus. \$45. Water Science and Technology Library.

Animal Models of Inherited Metabolic Diseases. Proceedings of a symposium, Bethesda, Md., Oct. 1981. Robert J. Desnick, Donald F. Patterson, and Dante G. Scarpelli, Eds. Liss, New York, 1982. xx, 522 pp., illus. \$54. Progress in Clinical and Biological Research, vol. 94.

Annual Review of Phytopathology. Vol. 20. Raymond G. Grogan, George A. Zentmyer, and Ellis B. Cowling, Eds. Annual Reviews, Palo Alto, Calif., 1982. xii, 468 pp., illus. \$22.

Annual Review of Sociology. Vol. 8. Ralph H. Turner and James F. Short, Jr., Eds. Annual Reviews, Palo Alto, Calif., 1982. xii, 370 pp. \$22.

Archaeoastronomy in the New World. American Primitive Astronomy. Proceedings of a conference, Oxford, Sept. 1981. A. F. Aveni, Ed. Cambridge University Press, New York, 1982. xii, 220 pp., illus. \$29.95.

Bees and Mankind. John B. Free. Allen and Unwin, Boston, 1982. x, 156 pp., illus. \$17.95.

Bibliographie der Pflanzenschutzliteratur. Bibliography of Plant Protection. W. Laux with W. Sicker, D. Jaskolla, and M. Scholz. Biologische Bundesanstalt für Land- und Forstwirtschaft, Berlin, 1982. xviii, 170 pp. + indexes. Paper, DM 55.

Biochemical Applications of Raman and Resonance Raman Spectroscopies. P. R. Carey. Academic Press, New York, 1982. xii, 264 pp., illus. \$34. Molecular Biology.

The Biochemical Basis of Neuropharmacology. Jack R. Cooper, Floyd E. Bloom, and Robert H. Roth. Oxford University Press, New York, ed. 4, 1982. x, 368 pp., illus. Cloth, \$21.95; paper, \$11.95.

Biodegradation of Pesticides. Fumio Matsumura and C. R. Krishna Murti, Eds. Plenum, New York, 1982. xiv, 312 pp., illus. \$39.50.

Biological Aspects of Schizophrenia and Addiction. Papers from a conference. Gwynneth Hemmings, Ed. Wiley-Interscience, New York, 1982. xvi, 278 pp., illus. \$43.95.

Biological Control of Weeds with Plant Pathogens. Papers from a workshop, Little Rock, Ark., Sept. 1980. R. Charudattan and H. L. Walker, Eds. Wiley-Interscience, New York, 1982. xvi, 294 pp., illus. \$42.50.

Deposition of Atmospheric Pollutants. Proceedings of a colloquium, Oberursel/Taunus, Germany, Nov. 1981. H.-W. Georgii and J. Pankrath, Eds. Reidel, Boston, 1982 (distributor, Kluwer Boston, Hingham, Mass.). x, 218 pp., illus. \$37.

Detergent Analysis. A Handbook for Cost-Effective Quality Control. B. M. Milwidsky and D. M. Gabriel. Halsted (Wiley), New York, 1982. xii, 292 pp., illus. \$57.95.

Dichotomies of the Mind. A Systems Science Model of the Mind and Personality. Walter Lowen with (Continued on page 320)

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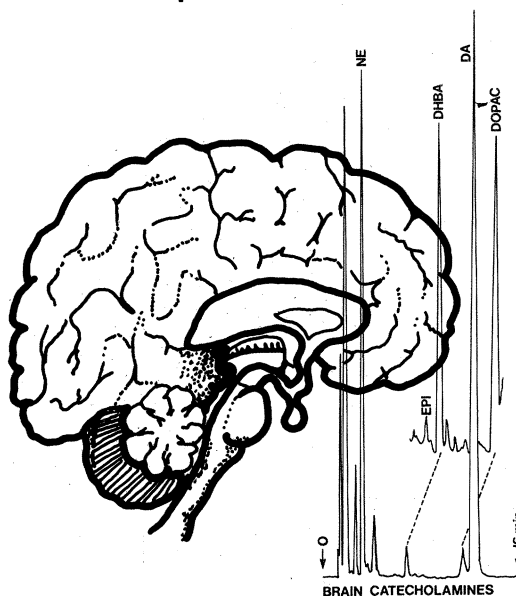
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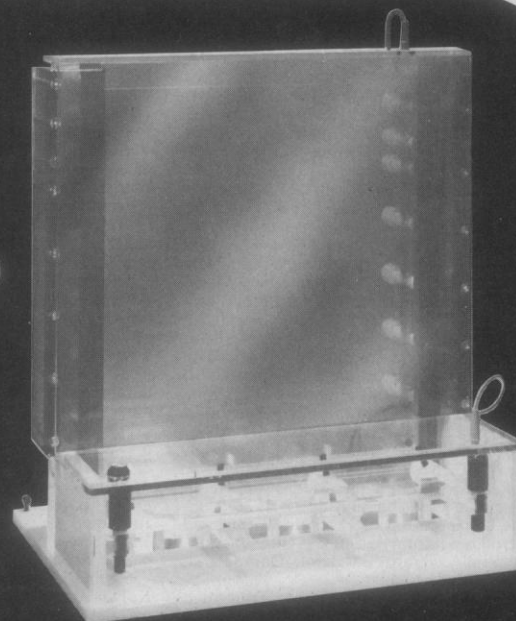
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BOOKS RECEIVED

(Continued from page 283)

the assistance of Lawrence Miike. Wiley-Interscience, New York, 1982. xii, 314 pp., illus. \$28.50.

Digestive Physiology and Nutrition of Marsupials. Ian D. Hume. Cambridge University Press, New York, 1982. x, 256 pp., illus. \$44.50. Monographs on Marsupial Biology.

Directory of Food Policy Institutes. Compiled by Duncan Miller and Morag Soranna. Published for the Organisation for Economic Co-operation and Development by Butterworth, Boston, 1982. 100 pp. Paper. \$29.95.

Dynamics of Biological Membranes. Influence on Synthesis, Structure and Function. Miles D. Houslay and Keith K. Stanley. Wiley-Interscience, New York, 1982. viii, 330 pp., illus. \$54.95.

Economics Deciphered. A Layman's Survival Guide. Maurice Levi. Basic Books, New York, 1982. xii, 306 pp. Paper, \$6.95. Reprint of the 1981 edition.

Electricity. Sources and Technologies. Edison Electric Institute, Washington, D.C., 1982. xii, 136 pp., illus. Paper, \$2.50. Decisionmakers Bookshelf.

Electron Microscopy of Proteins. Vol. 3. James R. Harris, Ed. Academic Press, New York, 1982. xiv, 260 pp., illus. \$57.

Glycosaminoglycans and Proteoglycans in Physiological and Pathological Processes of Body Systems. R. S. Varma and R. Varma, Eds. Karger, Basel, 1982. xii, 520 pp., illus. \$297.

Group Analysis of Differential Equations. L. V. Ovsiannikov. Translated from the Russian edition (Moscow, 1978). W. F. Ames, Transl. Ed. Academic Press, New York, 1982. xvi, 416 pp. \$54.

Handbook of Applicable Mathematics. Vol. 4, Analysis. Walter Ledermann and Steven Vajda, Eds. Wiley-Interscience, New York, 1982. xxiv, 866 pp., illus. \$85.

Handbook of Clinical Health Psychology. Theodore Millon, Catherine Green, and Robert Meagher, Eds. Plenum, New York, 1982. xxiv, 608 pp. \$50.

Herbicides and Plant Growth Regulators. W. W. Fletcher and R. C. Kirkwood. Granada, London, 1982 (U.S. distributor, Methuen, New York). viii, 408 pp., illus. \$49.95.

The Heroin Solution. Arnold S. Trebach. Yale University Press, New Haven, Conn., 1982. xvi, 332 pp. \$24.95.

Hierarchy. Perspectives for Ecological Complexity. T. F. H. Allen and Thomas B. Starr. University of Chicago Press, Chicago, 1982. xvi, 310 pp., illus. \$27.50.

High Energy Costs. Assessing the Burden. Proceedings of a conference, Washington, D.C., Oct. 1980. Hans H. Landsberg, Ed. Resources for the Future, Washington, D.C., 1982 (distributor, Johns Hopkins University Press, Baltimore). xxiv, 406 pp., illus. Paper, \$22.50.

High-Frequency Amplifiers. Ralph S. Carson. Wiley-Interscience, New York, ed. 2, 1982. xii, 292 pp., illus. \$29.95.

High-Performance Liquid Chromatography of Pesticides. James F. Lawrence. Academic Press, New York, 1982. x, 246 pp., illus. \$35. Analytical Methods for Pesticides and Plant Growth Regulators, vol. 12.

Hiroshima and Nagasaki. The Physical, Medical, and Social Effects of the Atomic Bombings. The Committee for the Compilation of Materials on Damage Caused by the Atomic Bombs in Hiroshima and Nagasaki. Translated from the Japanese edition (Tokyo, 1979) by Eisei Ishikawa and David L. Swain. Basic Books, New York, 1982. xlvii, 706 pp., illus. Paper, \$15.95. Reprint of the 1981 edition.

Histopathologie des Lymphomes Malins Non Hodgkiniens. D'après la Classification de Kiel. K. Lennert with the collaboration of H. Stein. Translated from the German edition (Berlin, 1981) by Jacques Diebold and Rémy Gérard-Marchant. Doin, Paris, 1981. xii, 128 pp., illus. Paper.

Insect Neurohormones. Marie Raabe. Translated from the French by Nissim Marshall. Illustrated by Daisy Chervin. Plenum, New York, 1982. xvi, 352 pp. \$42.50.

The Insects. Structure and Function. R. F. Chapman. Harvard University Press, Cambridge, Mass., ed. 3, 1982. xiv, 920 pp., illus. \$35.

Inside Rubik's Cube and Beyond. Christoph Bandelow. Cartoons by Alexander Mága. Birkhäuser, Boston, 1982. x, 126 pp. Paper, \$3.95.

Instrumentation for Astronomy with Large Optical Telescopes. Proceedings of a colloquium, Zelenchukskaya, U.S.S.R., Sept. 1981. Colin M. Humphries, Ed. Reidel, Boston, 1982 (distributor, Kluwer Boston, Hingham, Mass.). xviii, 326 pp., illus. \$48.50. Astrophysics and Space Science Library, vol. 92.

The Nature of Symbiotic Stars. Proceedings of a colloquium, Aug. 1981. Michael Friedjung and Roberto Viotti, Eds. Reidel, Boston, 1982 (distributor,

Kluwer Boston, Hingham, Mass.). xx, 314 pp., illus. \$43.50. Astrophysics and Space Science Library, vol. 95.

Network Optimisation Practice. A Computational Guide. David K. Smith. Horwood, Chichester, England, and Halsted (Wiley), New York, 1982. 238 pp., illus. \$59.95.

Neural Assemblies. An Alternative Approach to Artificial Intelligence. Günther Palm. Springer-Verlag, New York, 1982. viii, 246 pp., illus. \$39.80. Studies of Brain Function, vol. 7.

New Vistas in Glycolipid Research. Proceedings of a symposium, Otsu, Japan, Sept. 1981. Akira Makita, Shizuo Handa, Tamotsu Taketomi, and Yoshitaka Nagai, Eds. Plenum, New York, 1982. xiv, 490 pp., illus. \$62.50. Advances in Experimental Medicine and Biology, vol. 152.

Optokinetics. A Treatise on the Motions of Lights. Harry H. Mark. Corbett Press, Woodbridge, Conn., 1982 (distributor, House of Books, North Haven, Conn.). xii, 198 pp., illus. \$18.50.

Organic Reactions. Vol. 27. William G. Dauben, Ed. Wiley, New York, 1982. x, 406 pp., illus. \$45.

Photoreceptors. Their Role in Vision. Alan Fein and Ete Z. Szuts. Cambridge University Press, New York, 1982. xii, 212 pp., illus. \$34.50. IUPAB Biophysics Series, 5.

Physical Biochemistry. Applications to Biochemistry and Molecular Biology. David Freifelder. Freeman, San Francisco, ed. 2, 1982. xiv, 762 pp., illus. Cloth, \$24.95; paper, \$21.95.

Physical Cleaning of Coal. Present and Developing Methods. Y. A. Liu, Ed. Dekker, New York, 1982. xx, 552 pp., illus. \$75. Energy, Power, and Environment, 15.

Prehispanic Settlement Patterns in the Southern Valley of Mexico. The Chalco-Xochimilco Region. Jeffrey R. Parsons, Elizabeth Brumfiel, Mary H. Parsons, and David J. Wilson. University of Michigan Museum of Anthropology, Ann Arbor, 1982. xvi, 504 pp., illus. Paper, \$16. Memoirs of the Museum of Anthropology, University of Michigan, No. 14.

Prehospital Emergency Care and Crisis Intervention. Brent Q. Hafen and Keith J. Karren. Morton Publishing Company, Englewood, Colo., 1972 (distributor, Scribner, New York). x, 640 pp., illus., + plates. Paper, \$19.95.

Primrose McConnell's The Agricultural Notebook. R. J. Halley, Ed. Butterworth, Boston, ed. 17, 1982. xviii, 684 pp., illus. \$39.95.

Principles of Animal Agriculture. Charles E. Stufflebeam. Prentice-Hall, Englewood Cliffs, N.J., 1983. xii, 464 pp., illus. \$21.95.

Problem Solving and Comprehension. Arthur Whimbey and Jack Lockhead. Franklin Institute Press, Philadelphia, ed. 3, 1982. (distributor, Scribner, New York). vi, 344 pp., illus. Paper, \$10.95.

Progress in Cosmology. Proceedings of a symposium, Oxford, England, Sept. 1981. A. W. Wolfendale, Ed. Reidel, Boston, 1982 (distributor, Kluwer Boston, Hingham, Mass.). viii, 360 pp., illus. \$54.50. Astrophysics and Space Science Library, vol. 99.

Properties of Liquids and Solutions. J. N. Murrell and E. A. Boucher. Wiley, New York, 1982. x, 288 pp., illus. \$45.95.

The Pursuit of Prayer. Technology, Armed Force, and Society since A.D. 1000. William H. McNeill. University of Chicago Press, Chicago, 1982. x, 406 pp. \$20.

Space. Mankind's Fourth Environment. Papers from a congress, Rome, Sept. 1981. L. G. Napolitano, Ed. Pergamon, New York, 1982. viii, 558 pp., illus. \$90.

Space and Terrestrial Biotechnology. A. Cogoli and five others. Springer-Verlag, New York, 1982. viii, 232 pp., illus. \$39. Advances in Biochemical Engineering, 22.

The Space Shuttle Operator's Manual. Kerry Mark Joels and Gregory P. Kennedy. Ballantine, New York, 1982. Various pages, illus. Cloth, \$22.50; paper, \$9.95.

Stochastic Methods of Operations Research. J. Kohlas. Translated from the German edition (Stuttgart, 1977) by A. Schmidt. Cambridge University Press, New York, 1982. x, 224 pp. Cloth, \$34.50; paper, \$13.95.

VLSI System Design. When and How to Design Very-Large-Scale Integrated Circuits. Saburo Muroga. Wiley-Interscience, New York, 1982. xiv, 496 pp., illus. \$34.95.

War and Peace in Literature. Prose, Drama and Poetry Which Illuminate the Problem of War. Compiled by Lucy Dougall. World Without War Publications, Chicago, 1982. vi, 174 pp. Paper, \$5.

Water Analysis. Vol. 1. Inorganic Species, Part 1. Roger A. Minear and Lawrence H. Keith, Eds. Academic Press, New York, 1982. xii, 288 pp. \$39.50.

Water for Western Agriculture. Kenneth D. Frederick with James C. Hanson. Published for Resources for the Future by Johns Hopkins University Press, Baltimore, 1982. xiv, 242 pp. Paper.

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ASSISTANT PROFESSOR OF BIOLOGY Wesleyan University

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ASSISTANT PROFESSOR OF BIOCHEMISTRY (tenure track): Preferred research areas are developmental, neuro-, or cell-surface biochemistry or biological application of NMR. The appointment will be determined on the basis of scientific excellence and productivity as well as a commitment to teaching at the undergraduate and graduate levels. Send curriculum vitae, the names of three references, and a research plan to: **Nancy N. Nye, Biochemistry Department, School of Medicine, University of North Carolina, Chapel Hill, N.C. 27514. We are keenly interested in attracting outstanding women and/or minority scientists to this department. Equal Opportunity/Affirmative Action Employer.**

ASSISTANT PROFESSOR OF CHEMISTRY. The Chemistry Department at Amherst College seeks a Ph.D. chemist with a strong background and interest in biochemistry for a regular faculty appointment effective 1 July 1983. Excellent opportunity for a career emphasizing both research and undergraduate teaching. Teaching responsibilities may involve instruction in departmental courses at both elementary and advanced levels, one of which is an interdepartmental offering in biochemistry. The successful candidate will be expected to pursue a research program attracting the interest of chemistry majors and others such as students in our neuroscience program. Please send a résumé and brief description of your research and teaching ideas to: **Chairman, Department of Chemistry, Amherst College, Amherst, Massachusetts 01002, no later than 8 February 1983. Amherst College is an Equal Opportunity/Affirmative Action Employer.**

ASSISTANT PROFESSOR: POLYMER CHEMIST, physical chemistry background. Full-time, tenure-track position beginning fall 1983. The University of Santa Clara, a Jesuit university with ACS-approved department, seeks a person with an interest in teaching general chemistry lecture/laboratories in addition to an undergraduate course in polymers, and perhaps an introduction to chemical engineering course. Active research program involving undergraduates expected. Ph.D. required. Send résumé, transcripts, three letters of reference, and description of research interests, including equipment needs, by 15 February 1983 to: **Robert Pfeiffer, Chemistry Department, University of Santa Clara, Santa Clara, Calif. 95053. Equal Opportunity/Affirmative Action/Title IX Employer, M/F/H.**

POSITIONS OPEN

ASSISTANT PROFESSOR OF BIOCHEMISTRY. Tenure-track position for Ph.D. in biochemistry or chemistry beginning fall semester 1983 in an American Chemical Society accredited department with eight full-time faculty. Applicants must have a strong commitment to both teaching and research at the undergraduate level. Primary teaching responsibility is in the area of biochemistry with additional assignments in the introductory and organic chemistry courses. All applicants should submit complete curriculum vitae including a statement of teaching and research interests and transcripts of all undergraduate and graduate studies, and should arrange to have three letters of recommendation forwarded to: **Dr. Sandra A. Yeager, Chairperson, Search Committee, Department of Chemistry, Millersville State College, Millersville, Pa. 17551. Millersville State College, a fully accredited 4-year institution founded in 1855, is located 60 miles west of Philadelphia in historic Lancaster County and has an enrollment of approximately 6000 full- and part-time students. Millersville State College earnestly seeks and is eager to receive applications from women and minority candidates. Closing date for applications is 25 February 1983.**

HARVARD UNIVERSITY, DEPARTMENT OF ANTHROPOLOGY, invites applications for an **ASSISTANT PROFESSORSHIP IN BIOLOGICAL ANTHROPOLOGY.** We are interested in such areas as population and molecular genetics, human biology, neurophysiology, growth and development, nutrition, and demography. Evidence of a strong commitment to laboratory or field research and ability to teach undergraduates and direct doctoral research. Please send curriculum vitae and names of three references to: **The Chairman, Department of Anthropology, Harvard University, Cambridge, Mass. 02138. An Equal Opportunity/Affirmative Action Employer**

ASSISTANT PROFESSOR OF BIOMEDICAL SCIENCES—ANATOMY

The UCR/UCLA Division of Biomedical Sciences has an opening available 1 July 1983 for an exceptional individual capable of teaching human gross anatomy to medical students while continuing a very high-caliber research program in an area of basic medical science. Applicants should have a Ph.D. or M.D. degree and postdoctoral research experience and teaching experience in gross anatomy. *The University of California is an Affirmative Action/Equal Opportunity Employer.* Applications, including curriculum vitae and the names of three references, should be sent to:

**Ernst A. Noltmann, M.D., Chairman
Anatomy Search Committee
University of California
Riverside, California 92521**

UNIVERSITY OF COLORADO AT DENVER—BIOCHEMIST. A tenure-track assistant professor of biochemistry position beginning September 1983. Applicants must have strong commitment to both research and teaching in urban department with B.A. and M.S. programs. All research areas considered but preference given to individuals with a demonstrated competence in biochemical aspects of environmental chemistry. A strong background in molecular biology is essential. Submit letter of application, curriculum vitae, statement of research interests, and three letters of recommendation to: **Dr. Robert Damrauer, Department of Chemistry, University of Colorado at Denver, 1100 14th Street, Denver, Colorado 80202, by 28 February 1983. The University of Colorado is an Affirmative Action/Equal Opportunity Employer.**

UNIVERSITY OF COLORADO AT DENVER—ENVIRONMENTAL CHEMIST OR GEOCHEMIST. A tenure-track assistant professor position beginning September 1983. Applicants must have a strong commitment to both research and teaching in urban department with B.A. and M.S. programs. Successful applicants must have a strong chemistry background, be able to participate in undergraduate chemistry instruction, and have demonstrated research interests in geochemistry, energy resources, or environmental chemistry to complement a developing departmental program. Submit letter of application, curriculum vitae, statement of research interests, statement of undergraduate chemistry teaching competence, and three letters of recommendation to: **Dr. John Lanning, Department of Chemistry, University of Colorado at Denver, 1100 14th Street, Denver, Colorado 80202, by 28 February 1983. The University of Colorado is an Affirmative Action/Equal Opportunity Employer.**

POSITIONS OPEN

ASSISTANT PROFESSOR—GENETICS. The Department of Biological and Environmental Sciences, McNeese State University, invites applications for a tenure-track position in the general area of genetics, to begin August 1983. Applicants must have a Ph.D.; a strong commitment to research and teaching at both graduate and undergraduate levels is essential. Send résumé and summary of research plans by 15 March 1983 to: **Dr. Bill W. Taylor, Chairman, Biology Search Committee, Department of Biological and Environmental Sciences, McNeese State University, Lake Charles, La. 70609.** An Equal Opportunity/Affirmative Action Employer.

ASSISTANT PROFESSOR OF PHYSIOLOGY: NEUROPHYSIOLOGY. Position open for a Ph.D. or M.D. with at least 2 years of postdoctoral research experience for a tenure-track assistant professorship. This individual is expected to initiate and maintain a strong and independent research program and to participate in the teaching of the neurosciences. Researchers in the area of sensorimotor systems, cellular, developmental, and endocrine neurobiology are especially invited to apply. Applications, including curriculum vitae, a brief statement of research interests, and the names of three references, should be mailed by 15 February 1983 to: **Dr. Robert B. Gunn, Chairman, Department of Physiology, Emory University School of Medicine, Atlanta, Ga. 30322.** Emory University is an Equal Opportunity/Affirmative Action Employer.

ASSOCIATE SCIENTIST POSITION AVAILABLE AT UNIVERSITY OF WISCONSIN—MADISON PHYSICAL SCIENCES LABORATORY

Requires Ph.D. in physics with 3 years of experience in vacuum ultraviolet and soft x-ray optics, spectroscopic techniques, and electronics. Must have carried out research using synchrotron radiation.

Conduct research and development program in the design and construction of advanced VUV and soft x-ray monochromators, optical systems and advanced instrumentation for use in VUV and soft x-ray spectroscopic research utilizing synchrotron radiation. Assist other researchers in utilizing the Synchrotron Radiation Facility.

Full-time, 40 hours per week, minimum. Salary at \$27,000 for 12 months. *The University is an Equal Opportunity Employer.*

Qualified persons should contact: **Sath Menon, Wisconsin Job Service, 206 North Broom Street, Madison, Wisconsin 53703.** Telephone: 608-266-3678.

This ad not paid for by Job Service funds.

BIOCHEMIST OR MOLECULAR BIOLOGIST. The Department of Biochemistry and the Sickle Cell Center at Meharry Medical College invite applications for a tenure-track faculty position at the ASSISTANT OR ASSOCIATE PROFESSOR LEVEL. Preference will be given to applicants whose research is in the biochemistry and/or molecular biology of blood diseases including, but not limited to, sickle cell disease. Applicants should have a Ph.D. or M.D. degree and postdoctoral or previous faculty experience. Successful applicants will be expected to teach biochemistry in graduate and professional school courses. The position will be a joint appointment in the Department of Biochemistry and in the Sickle Cell Center, and is available immediately. Applications, including curriculum vitae, representative publications, a concise statement of research interests and/or proposed research, and names of three references, should be sent to: **Dr. Ifeanyi J. Arinze, Department of Biochemistry, School of Medicine, Meharry Medical College, Nashville, Tennessee 37208.**

MICHIGAN—BIOCHEMIST. Tenure-track position in the Department of Oral Biology for Ph.D. with research experience in biochemistry focusing on cariogenesis, periodontal disease, connective tissue biochemistry, salivary biochemistry, or related subjects. Candidates must have teaching experience, a record of publications in prestigious journals, and the ability to generate funding from outside sources. Potential exists for ties with Dental Research Institute. Will be responsible for teaching "oral" biochemistry to dental students. Academic rank and salary commensurate with education and experience. A nondiscriminatory, Affirmative Action Employer. Send curriculum vitae, names of three references, and brief description of current research activities to: **Biochemistry Search Committee, Office of the Dean, School of Dentistry, The University of Michigan, Ann Arbor, Mich. 48109.** Deadline date is 1 May 1983.

POSITIONS OPEN

BIOCHEMISTRY FACULTY POSITION, 12-month, tenure track, starting 1 July 1983; 90 percent research. Rank and salary negotiable. Preference for cellular biology, enzymology, biochemical toxicology, macromolecular metabolism, and enzymatic or hormonal regulation of growth and development. Ph.D. or equivalent required; postdoctoral experience desired. Send résumé, transcripts, three letters of reference, and outline of future research by 4 March 1983 to: **Christian Paech, Department of Chemistry, South Dakota State University, Box 2170, Brookings, S.D. 57007.** An Equal Opportunity/Affirmative Action Employer.

BIOGEOCHEMIST OR ENVIRONMENTAL ORGANIC CHEMIST

Full-time faculty research position for biogeochemist or environmental chemist at the Savannah River Ecology Laboratory (SREL). Ph.D., U.S. citizenship, publications in the open literature, relevant experience, and a strong background in environmental organic chemistry required. Responsibilities will be to develop a strong basic research program and participate in the applied research programs of the laboratory. Emphasis will be on the fate and behavior of organic compounds and organometallic compounds in terrestrial and aquatic ecosystems. Rank and salary negotiable. By 1 March 1983 send résumés, reprints, and the names, addresses, and telephone numbers of four references to:

Dr. Domy Adriano
Chairman of Search Committee
SREL
Drawer E
Aiken, S.C. 29801

The University of Georgia—An Equal Opportunity/Affirmative Action Institution.

CHAIRPERSON, DEPARTMENT OF BIOCHEMISTRY. Applications are sought from individuals to head the Department of Biochemistry at the University of Vermont College of Medicine. Ph.D., M.D., or equivalent degree, with demonstrated capabilities in research, including the ability to obtain external funding. Administrative experience and effectiveness in teaching required. Address inquiries by 1 March 1983 to: **Norman R. Alpert, Ph.D., Chairman, Biochemistry Search Committee, University of Vermont College of Medicine, Burlington, Vermont 05405.** An Equal Opportunity/Affirmative Action Employer; women and minorities are encouraged to apply.

DEAN, FACULTY OF SCIENCE. The College of Arts and Sciences at the University of Arizona is composed of the Faculties of Fine Arts, Humanities, Science, and Social and Behavioral Sciences, each of which has its own dean. The Faculty of Science consists of 12 departments, including mathematics, the physical, and the biological sciences.

The dean serves as the chief academic and budget officer of the Faculty of Science and has full responsibility to promote the continued growth of quality in teaching, research, and service programs. In fulfilling these duties, the dean represents the faculty within the University community and is directly responsible to the senior vice president for academic affairs.

Applicants and nominees should send a letter of interest in the position, along with up-to-date curriculum vitae and the names of five references, no later than 30 March 1983, directly to:

A. B. Weaver, Executive Vice President
University of Arizona
Administration 512
Tucson, Arizona 85721

Equal Opportunity/Affirmative Action Employer

CHAIRMAN OF BIOCHEMISTRY—The Medical College of Ohio (MCO) invites applications and nominations for chairman of biochemistry. The new chairman must have a distinguished record of research accomplishment, a commitment to good teaching, proven leadership ability, and be able to develop existing and new teaching and research activities. The well-established department has eight full-time faculty members and modern research facilities and equipment for funded research. The department teaches medical students (class size: 150), baccalaureate nursing students (class size: 150), and graduate students on a new and growing campus. Send curriculum vitae to: **Keith K. Schlender, Ph.D., Department of Pharmacology, Medical College of Ohio, C.S. 10008, Toledo, Ohio 43699.** MCO is an Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

BIOGEOGRAPHY OF LATIN AMERICA AND THE CARIBBEAN

A major analysis of the biogeography of Latin America and the Caribbean, to aid in resource planning and in establishing conservation priorities, will be developed as a joint effort among OAS, Unesco, IUCN, and The Nature Conservancy. Applications are invited for two positions in Washington, D.C., 1-year and 2-year. Ph.D. or M.S.; biologist and geographer, with training/experience in biogeography, zoogeography, phytogeography, or plant ecology. Other desirable experience in cartography, remote sensing applications, data management, and Latin American fieldwork. Working Spanish required. Send résumé and publications by 28 February to: **William Burley or Guillermo Mann, The Nature Conservancy International Program, 1785 Massachusetts Avenue, NW, Washington, D.C. 20036; telephone: 202-483-0231.**

OAKLAND UNIVERSITY

The Department of Biological Sciences invites applications for three anticipated tenure-track faculty positions:

1) **CELL/MOLECULAR BIOLOGIST.** Assistant professor to conduct research at the cellular and/or molecular level and to contribute to a proposed doctoral program in cellular aging. Teaching includes a two-semester course in human biology, emphasizing human physiology and participation in graduate program. Ph.D. and postdoctoral training required.

2) **DEVELOPMENTAL BIOLOGIST/IMMUNOLOGIST.** Assistant professor to conduct research in developmental biology with immunological approach or on an immunological problem and to contribute to a proposed doctoral program in cellular aging. Teaching includes a course in undergraduate developmental biology and another in immunology. Ph.D. and postdoctoral training required.

3) **VERTEBRATE FIELD BIOLOGIST.** Assistant professor with demonstrated research expertise in vertebrate ecology, evolution, or behavior. Teaching responsibilities include general biology and vertebrate biology in alternate semesters as well as participation in the ecology graduate program. Ph.D. required and postdoctoral experience desirable.

Oakland University is a state university of 12,000 students that is committed to excellence in research and teaching. The largely natural, 1,600-acre campus is located 25 miles north of Detroit. Send curriculum vitae, names of three referees, brief description of research goals, and letter of application specifying the position of interest to: **Dr. N. J. Unakar, Chairman, Department of Biological Sciences, Oakland University, Rochester, Michigan 48063.** Deadline: 1 March 1983.

Affirmative Action/Equal Opportunity Employer

DEVELOPMENTAL BIOLOGIST—Opening for a developmental biologist with broad interests in molecular and cellular biology. A tenure-track position at the assistant professor level is open immediately for a person able to generate own salary from grants or contracts. A University commitment to assume funding of the position at a later date has been made. Send application, résumé, and names of three or more references to: **Professor W. J. Brett, Chairperson, Life Sciences Department, Indiana State University, Terre Haute, Ind. 47809,** no later than 15 March 1983. *Indiana State is an Equal Opportunity/Affirmative Action Employer.*

ENGINEER OR PHYSICIST

The National Institute for Occupational Safety and Health (NIOSH), Centers for Disease Control, is seeking a chief for the Physical Agents Effects Branch, Division of Biomedical and Behavioral Science, in Cincinnati, Ohio. The successful candidate will manage NIOSH's principal research program addressed to the health and safety consequences of occupational exposure to such physical agents as noise, radiation, vibration, thermal extremes, and barometric extremes.

Candidate must be an engineer or physicist with experience in the development and direction of biomedical research programs and with a commensurate record of scientific accomplishment.

The position is in the Career Civil Service, GS-14 or -15, or the Public Health Service Commissioned Corps, 0-6. Salary range: \$41,277 to \$48,553, depending on qualifications, experience, and personnel system.

Interested candidates should send applications to: **Jon Ruse, NIOSH Personnel Office, 4676 Columbia Parkway, Cincinnati, Ohio 45226.**

An Equal Opportunity Employer

DIRECTOR
SCHOOL OF NUCLEAR ENGINEERING
AND HEALTH PHYSICS

Applications are invited for the position of director of the School of Nuclear Engineering and Health Physics, Georgia Institute of Technology. The School, with a faculty of sixteen, offers undergraduate and graduate degrees and currently has enrolled 148 undergraduate and 78 graduate students. The curriculum encompasses a wide range of topics in fission reactor technology, operations, and economics, fusion, health physics, radiation applications, and environmental studies. Faculty research is conducted in all of these areas.

Applicants should have a distinguished research record in one or more of the areas relevant to the School, demonstrated leadership and administrative experience appropriate to chairing a strong department, and an earned doctorate in a related field of engineering or science. Applications including a complete curriculum vita and the names of three references who may be contacted should be sent no later than March 1, 1983 to Dr. W. M. Stacey, Jr., Chairman of the Search Committee, School of Nuclear Engineering and Health Physics, Georgia Institute of Technology, Atlanta, Georgia 30332.

Georgia Tech is an equal education and employment opportunity institution.

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Science

ASSOCIATE EXECUTIVE DIRECTOR

Exceptional opportunity to assist the Executive Director with overall planning, coordination, and direction of the Commission on Physical Sciences, Mathematics, and Resources (CPSMR) of the National Research Council/National Academy of Sciences. Primary responsibilities will include communications with sponsoring agencies, developing new activities, supervision and recruitment of staff, fiscal management, and preparation and review of reports. Candidates should have a Ph.D. or equivalent in physical sciences, mathematics, or resource-related field plus seven to ten years or more of experience in research or scientific/technical administrative positions. Experience should demonstrate effective management and communication skills. Please submit resume immediately to: **Dr. R. G. Kasper, Executive Director, Commission on Physical Sciences, Mathematics, and Resources, National Academy of Sciences, 2101 Constitution Avenue, Washington, D.C. 20418.** An Equal Opportunity Employer.

ORGANIC CHEMIST

The Office of Naval Research is seeking a highly qualified individual to serve as a Scientific Officer to plan and manage a contract research program in organic chemistry. This is a Civil Service position at the GM-13 (\$34,930-\$45,406) or GM-14 (\$41,277-\$53,661) level, depending on qualifications.

The incumbent is responsible for planning, coordinating and directing a \$1-\$2M research program involving the theories, concepts and experimental techniques in areas of organic chemistry including chemical synthesis, organic polymers, electroorganic synthesis, high energy chemistry, and high pressure organic chemistry, and in multidisciplinary areas such as catalysis and materials degradation.

Applicants must have a Ph.D. degree or equivalent in organic chemistry and a minimum of three years of progressively responsible professional experience. At least one year of experience must be comparable in difficulty and responsibility to the next lower level in the Federal Service. Equivalent combinations of professional experience and graduate education are acceptable. Interested persons should

submit a resume or Standard Form 171, Personal Qualifications Statement (available at Federal Job Information Centers or from the address below), to:

OFFICE OF
NAVAL RESEARCH
Civilian Personnel Division,
Code 791SC
ATTN: Announcement #83-01 (S)
800 North Quincy Street
Arlington, VA 22217

Applications will be accepted through 22 February 1983.
 An Equal Opportunity Employer • U.S. Citizenship Required

POSITIONS OPEN

ROSENSTIEL SCHOOL OF MARINE AND ATMOSPHERIC SCIENCE UNIVERSITY OF MIAMI DIVISION CHAIRMAN

Applications are invited for the position of chairman, Division of Biology and Living Resources, which comprises 23 faculty members and 80 graduate students. Division activities cover a wide range of disciplines from marine biochemistry to marine mammals and plans call for an increase in the number of faculty and expanded interdisciplinary and international activities. Applicants should have an international reputation in research, strong teaching background, and demonstrated skills in coordinating activities of a diverse group of faculty and students. Appointment will be at the rank of professor and is available on or after 1 June 1983. Applications with detailed curriculum vitae and names of five referees should be submitted by 31 March 1983 to:

Dr. Frank Williams, Chairman, Search Committee
Division of Biology and Living Resources
University of Miami
4600 Rickenbacker Causeway
Miami, Florida 33149
Telephone: 305-350-7315

The University of Miami is an Equal Opportunity/Affirmative Action Employer.

SIDS INSTITUTE DIRECTOR

The University of Maryland, Department of Pediatrics, invites nominations and applications for director, Sudden Infant Death Syndrome (SIDS) Institute. This Institute implements and fosters interdisciplinary research, advanced training programs, and clinical service directed toward prevention of SIDS. Responsibilities include leadership, administration, and development of SIDS programs. The candidate must have established research skills and interest in relevant aspects of infant medicine.

Applications, including curriculum vitae and three letters of reference, will be received until 28 February 1983. *Equal Opportunity Employer. Department of Pediatrics, University of Maryland Hospital, Baltimore, Maryland 21201.*

DIRECTOR

Division of Health Policy
Research and Education

Harvard University is seeking a director of the recently established Division of Health Policy Research and Education. The director will be responsible for coordinating teaching and research activities in the area of health policy now carried on in the several faculties. Will serve as a spokesperson for the University and provide leadership in presenting health policy programs.

The director will have appropriate academic appointments in the Faculties of Medicine, Public Health, and Government. Candidates must have done significant meritorious and scholarly work in health policy or a related area. Must possess a sophisticated commitment to the interdisciplinary nature of the health policy programs, while demonstrating organizational and administrative abilities as well.

Interested, qualified persons may submit their curriculum vitae and publications to: **Dr. Julius B. Richmond, Division of Health Policy Research and Education, 25 Shattuck Street, Boston, Mass. 02115.** *Harvard is an Equal Opportunity/Affirmative Action Employer.*

ENERGY RESEARCH STAFF OFFICER

The National Research Council seeks applicants for the position of staff officer for the Energy Engineering Board. Duties will include assisting in the management of three or more studies, including electromagnetic pulse and fossil energy research needs. Applicants should have a M.S. or equivalent, plus related work experience in an energy field. Must have a demonstrated understanding of issues involving development of fossil energy, fossil energy research and development, and/or an understanding of the development of nuclear energy, nuclear research and development.

Send résumé to: **Dennis F. Miller, National Research Council, 2101 Constitution Avenue, NW, Washington, D.C. 20418.** *An Equal Opportunity Employer.*

POSITIONS OPEN

DIRECTOR OF RESEARCH HENRY FORD HOSPITAL Detroit, Michigan

Candidates are invited to apply for the position of director of research (equivalent to dean of research) at Henry Ford Hospital. The hospital is a 1000-bed major health, education, and research center and is affiliated with the University of Michigan. More than 30 basic and clinical research programs are carried out in a new research facility opened in 1977, which operates under a combined budget of approximately \$7 million. Candidates for this exciting and challenging position should have a M.D., Ph.D., or equivalent degree, a capacity for academic leadership, experience in basic and clinical research, a proven record of success in obtaining grants from the NIH and similar organizations, and experience in administration.

Nominations or applications, including curriculum vitae and names of three references, should be sent to: **Dr. Joseph C. Cerny, Chairman of the Search Committee for Director of Research, Department of Urology, 2799 West Grand Boulevard, Detroit, Michigan 48202.**

Henry Ford Hospital is an Equal Opportunity/Affirmative Action Employer.

The Johns Hopkins University, Department of Geography and Environmental Engineering. Two tenure-track appointments anticipated at the assistant or associate professor level.

ENVIRONMENTAL SYSTEMS ANALYSIS. Opening for engineer in Program in Systems Analysis and Economics for Public Decision Making. Graduate training should be in civil and environmental engineering or related engineering field. Knowledge of micro-economics, probability and statistics, and mathematical programming essential. Specific water resources systems or environmental systems background most desirable. Operations research orientation alone is insufficient. Ability to teach courses in water resources, mathematical programming, and water quality modeling. Applicants should send résumé and the names of three referees by 15 February 1983 to: **Professor Charles ReVelle, Department of Geography and Environmental Engineering, The Johns Hopkins University, Baltimore, Md. 21218.**

SURFICIAL EARTH PROCESSES, HYDROLOGY, GEOMORPHOLOGY. The department seeks an individual interested in surface earth processes and landforms. Background in the earth sciences should include a knowledge of hydrology, principles of fluid flow, and behavior of earth materials. Department includes related work in environmental engineering, systems analysis, and resources. Applicants should send résumé and the names of three referees by 15 February 1983 to: **Professor M. Gordon Wolman, Department of Geography and Environmental Engineering, The Johns Hopkins University, Baltimore, Md. 21218.**

The Johns Hopkins University is an Equal Opportunity/Affirmative Action Employer.

FACULTY POSITIONS IN PHARMACOLOGY

The Department of Pharmacology at The University of Texas Health Science Center at Dallas seeks applications for tenure-track positions at the level of assistant or associate professor. Applicants must have a relevant Ph.D. or M.D. degree, postdoctoral training, and show evidence of firm commitment to a career in independent research. We are particularly interested in considering individuals with an appropriate background who wish to apply techniques of molecular or cellular biology or biochemistry to fundamental problems of pharmacological interest. Responsibilities will also include teaching of medical and/or graduate students after the first year of employment. Send curriculum vitae and a brief description of proposed research to: **Dr. Alfred G. Gilman, Chairman, Department of Pharmacology, University of Texas Health Science Center at Dallas, 5323 Harry Hines Boulevard, Dallas, Texas 75235.** *An Equal Opportunity/Affirmative Action Employer.*

FORESTRY/NATURAL SCIENCE

Half-time, 1-year renewable position in forestry (taught within natural sciences program).

All aspects of undergraduate teaching, including direction of senior research. Prefer Ph.D. qualified to teach additional course in related field. Résumé and references by 15 March to: **James E. Thomas, Dean of Faculty, Marlboro College, Marlboro, Vermont 05344.**

Equal Opportunity Employer

POSITIONS OPEN

The Department of Biochemistry at the University of Wyoming invites applications for a tenure-track, 11-month, **FACULTY POSITION** available 1 July 1983. Responsibilities will include undergraduate and graduate teaching plus establishment of an active research program. The position is open at all levels. Consideration will be given to senior level applicants with demonstrated ability to aid an emerging department in academic and research development. Rank and salary commensurate with experience. Résumé, statement of proposed research, and names of three references should be submitted by 15 March 1983 to: **Ivan I. Kaiser, Chairman, Department of Biochemistry, University of Wyoming, Laramie, Wyo. 82071.** *Affirmative Action/Equal Opportunity Employer.*

The University of Michigan Medical Center, Department of Internal Medicine, has a position available in the **DIVISION OF GASTROENTEROLOGY.** The individual will participate in a vigorous teaching effort in gastroenterology and gastroenterological procedures to fellows, house staff, medical students, and physicians attending postgraduate studies. Research opportunities can be designed to meet individual needs. Completion of a University-based training program and Board-certification in internal medicine are required. Eligibility for GI Boards is required, with expected certification within one year. Record of productivity in scholarly efforts in GI desired. Send inquiries, along with curriculum vitae, to: **Timothy Nostrant, M.D., University of Michigan Medical Center, Division of Gastroenterology, D2105 SACB, Box 002, Ann Arbor, Mich. 48109.** *The University of Michigan is a nondiscriminatory, Affirmative Action Employer. Code 277HO.*

GENETICIST. The Augustana College, Biology Department, has a tenure-track opening for an assistant professor (Ph.D.) in September 1983. Applicants must be prepared to teach genetics and an upper-division course, and to participate in introductory biology and/or cell biology. Staff members are expected to maintain active research programs that involve undergraduate students. Augustana is a liberal arts college related to The American Lutheran Church. Applications should include curriculum vitae, complete transcripts, three letters of professional evaluation including critical comments on past teaching performance and research ability, and the applicant's statement of plans for future professional development. Applications accepted until 28 February 1983 or until position is filled. Send applications to:

Dr. Arthur L. Olsen
Provost
Augustana College
Sioux Falls, S.D. 57197

An Equal Opportunity/Affirmative Action Employer

Ph.D. IMMUNOLOGIST/MICROBIOLOGIST with special interest in host defense against infection. To manage and co-direct Surgical Immunobiology Laboratory with special interests in infections, nutrition, immunomodulators, and burns. Salary negotiable. Send curriculum vitae to: **J. Wesley Alexander, M.D., University of Cincinnati, Department of Surgery, ML Number 558, Cincinnati, Ohio 45267.**

IMMUNOPARASITOLOGIST

The University of Georgia, Department of Zoology, has a tenure-track position, starting September 1983, at assistant or associate professor level, for an immunoparasitologist. The candidate will be expected to develop an active research program, preferably dealing with parasitic protozoa. He or she will also be expected to develop advanced courses and/or participate in existing courses. Rank and salary will be commensurate with qualifications and postdoctoral experience.

Send résumé, a brief description of research and teaching goals, and at least three letters of reference by 15 March 1983 to: **Dr. Raymond T. Damian, Department of Zoology, University of Georgia, Athens, Ga. 30602.**

An Affirmative Action/Equal Opportunity Employer

INSTRUCTOR—GENERAL BIOLOGY. Nontenure-track. Primary duties: supervision and coordination of laboratory preparation for multi-section courses in biology with the possibility of a lecture assignment; 12-month appointment. M.S./M.A. in biological science minimal; experience desired. Position available 1 July 1983. Application deadline: 1 April 1983. Send curriculum vitae, transcripts, and three letters of recommendation to: **Dr. C. F. Bailey, Department of Biology, SB 405, University of Arkansas, Fayetteville, Ark. 72701.** *An Equal Opportunity/Affirmative Action Employer.*

**Dept. of
Biological Sciences
ST. JOHN'S UNIVERSITY,
New York**

The Dept. of Biological Sciences, with masters and doctoral programs, invites applications from Ph.D.'s for a tenure-track position. **EXPERTISE:** yeast genetics or membrane biology preferred but other research interests considered. Candidate expected to teach undergraduates and develop graduate courses. Associate Prof. (six years teaching and research required), Assistant Prof. (three years post-doctoral teaching required). Successful applicant is expected to continue research productivity and seek external research support. Salary commensurate with experience. Applicants may submit a curriculum vitae, area of research interest, record of extramural support, and three references to:

Dr. Michael A. Pisano, Chairman,
Dept. of Biological Sciences,
St. John's University,
Jamaica, New York 11439
An Equal Opportunity Employer—M/F

**THE PENNSYLVANIA
STATE UNIVERSITY
ERIE, PENNSYLVANIA**

HEAD, DIVISION OF NATURAL SCIENCES AND ENGINEERING. The division has 40 full-time faculty in the disciplines of engineering, biology, chemistry, physics, mathematics, geoscience, and computer science. The division offers associate, baccalaureate, and graduate programs in science, engineering, and technology, and it has a special commitment to innovation and interdisciplinary studies, recently supported by a NSF CAUSE grant. The division has chosen to focus on the themes of energy and the environment for much of its instruction and research programs.

General qualifications include an earned doctorate in engineering or a closely related field, successful teaching experience, and a strong record in research and scholarship. In addition, significant administrative experience is desirable. The division headship includes a faculty appointment at the rank of associate or full professor.

Erie is a city of year-round cultural and recreational opportunities with particularly strong opportunities for music, theatre, skiing, and water sports. Applications and three letters of recommendation should be received by 15 March 1983 and should be addressed to:

Search Committee for NSE Head
Office of the Dean
Behrend College, Box 102
The Pennsylvania State University
Station Road
Erie, Pa. 16563

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**INGENE POSITIONS
IN BIOTECHNOLOGY**

INGENE is a young and rapidly growing company creating agricultural, biomedical, and industrial products through genetic engineering technologies. Our laboratory facilities support projects utilizing recombinant DNA approaches, molecular genetics, tissue culture, DNA synthesis and sequencing, and immunology. We are now seeking additional personnel in the fields of:

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Director of Personnel
INGENE
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**DEAN
SCHOOL OF PUBLIC HEALTH
UNIVERSITY OF MINNESOTA**

The University of Minnesota invites nominations and applications for the position of Dean, School of Public Health. The School, established in 1944, has developed strong public health academic and research programs and is organized into the divisions of Biometry, Community Public Health Programs, Environmental Health, Epidemiology, Hospital and Health Care Administration, and the Center for Health Services Research. M.P.H. and M.H.A. degree programs are offered by the School; M.S. and Ph.D. programs are offered through the Graduate School.

The Dean is a tenured member of the faculty and the chief executive officer of the School with responsibility for leadership in planning and development, personnel administration, resource improvement and management, and in representing the School.

Candidates must have substantial administrative experience, a distinguished record of public health teaching, scholarly activity and a documented commitment to service. An earned doctorate and a minimum of 10 years experience are required. Faculty rank and salary commensurate with qualifications and background. Closing date for applications April 1, 1983. Anticipated starting time September, 1983.

Applications with curriculum vitae and bibliography should be sent to:

Professor Ellen T. Fahy, Chair
Search Committee for Dean,
School of Public Health
c/o School of Nursing
University of Minnesota
308 Harvard St., 5-140D Unit F
Minneapolis, MN 55455

The University of Minnesota is an equal opportunity educator and employer and specifically invites and encourages applications from women and minorities.

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Dr. Robert Sekuler
Cresap Neuroscience Laboratory
Northwestern University
Evanston, Ill. 60201

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NATIONAL SCIENCE FOUNDATION (NSF)

NSF, Division of Mathematical and Computer Sciences, is seeking qualified applicants for a position in the field of INTELLIGENT SYSTEMS. The position will be filled on a 1- or 2-year rotational basis and is excepted from the competitive civil service at grade GS-14/15 (equivalent to GS-14/15), \$41,277 to \$63,115 (limited by statute to \$57,500) per annum. The Division of Mathematical and Computer Sciences is responsible for the major scientific areas of mathematics and computer sciences. It administers programs in support of basic research, research facilities, and other scientific activities. The program director is responsible for the administration of support programs in the scientific subdisciplines assigned to him/her. Applicants should have a Ph.D. or equivalent experience and training in an appropriate field, plus 6 to 8 years of successful scientific research experience. A broad general knowledge of computer research and some administrative experience are also required. Interested applicants may send résumés to: **The National Science Foundation, Personnel Administration Branch, Room 212, 1800 G Street, NW, Washington, D.C. 20550; attention: E. Paul Broglio, EX 83-20.** For further information, telephone: 202-357-7841. *NSF is an Equal Opportunity Employer.*

MICROBIOLOGIST: Tenure-track position at the assistant professor level. Ph.D. preferred. Courses to be taught are microbiology, bacteriology, introductory biology, and, on an alternate year basis, immunology, and pathogenic organisms. Send curriculum vitae, transcripts, and three letters of recommendations by 28 February 1983 to: **Dr. B. Gottfried, Department of Biology, College of St. Catherine, St. Paul, Minn. 55105.** *Affirmative Action/Equal Opportunity Employer.*

The Department of Obstetrics and Gynecology at the University of Michigan and the Washtenaw County League for Planned Parenthood are seeking an **OBSTETRICIAN/GYNECOLOGIST** with a primary interest in family planning and preventive medicine to function jointly as the medical director of Planned Parenthood and as a tenure-track faculty member in the Department of Obstetrics and Gynecology. Half of the time will be spent in clinical practice, research, and teaching in the Department of Obstetrics and Gynecology at the University of Michigan in programs related to the expansion of primary obstetrics/gynecology health care services. The remainder will be spent as the medical director of Planned Parenthood with responsibility for general supervision of medical services, administration, community relations, education, and research. Candidates who are Board-eligible or Board-certified in obstetrics and gynecology with additional training, experience, and specialization in reproductive health care should apply. Candidates with an M.P.H. are preferred. *The University of Michigan is an Equal Opportunity/Affirmative Action Employer.* Code: 29HO. Reply to: **Alan E. Beer, M.D., Professor and Chairman, Department of Obstetrics/Gynecology, Women's Hospital, University of Michigan, Ann Arbor, Mich. 48109.**

The University of Michigan Medical School has an opening for an **M.D. PATHOLOGIST** at the junior faculty level, Board-certified in anatomic pathology and in the subspecialty of neuropathology. Responsibilities will include the instruction of medical students, house officers and staff, administrative and service work, as well as development of a strong inter- and intradepartmental neuroscience research program. Candidates should be referred to:

Peter A. Ward, M.D.
Professor and Chairman
Department of Pathology
M5240 Medical Science I Box 045
1315 Catherine Road
Ann Arbor, Mich. 48109

The University of Michigan is an Equal Opportunity/Affirmative Action Employer. Code: 08.

POSITIONS OPEN

MICROBIOLOGY. Applications are invited from individuals with a background in microbiology and with demonstrated research excellence, preferably in molecular genetics, for a tenure-track assistant professorship in the Department of Microbiology at the Medical College of Wisconsin. Applicants must have postdoctoral experience and are expected to develop a vigorous independent research program and instruct medical and graduate students. Candidates should forward curriculum vitae, brief statement of research plans, and names of three individuals who can provide references to: **Search Committee, Department of Microbiology, Medical College of Wisconsin, 8701 Watertown Plank Road, Milwaukee, Wisconsin 53226.** *Affirmative Action/Equal Opportunity Employer.*

THE DEPARTMENT OF NEUROBIOLOGY AND ANATOMY THE UNIVERSITY OF TEXAS MEDICAL SCHOOL AT HOUSTON

Invites applications for two positions available at the assistant, associate, and full professor levels from candidates with research interests related to neuroscience. Preference will be given to candidates with teaching capability in gross anatomy. Please submit curriculum vitae and names of three references by 15 February 1983 to:

Search Committee
Neurobiology and Anatomy
University of Texas
Medical School at Houston
P.O. Box 20708
Houston, Texas 77025

An Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply

PHARMACOLOGIST/PHARMACOKINETICIST. Assistant professor. **Qualifications:** Doctorate degree (D.V.M., Ph.D., Pharm.D.) with evidence of interest in teaching and research, preferably in the area of pharmacokinetics. **Responsibilities:** Contribute to the teaching of pharmacology in the professional curriculum as well as participation in graduate degree and other educational programs. The potential for interdisciplinary research is outstanding. The successful candidate will be expected to initiate and conduct a high quality research program. **Closing date:** 1 March 1983, or until filled. **Availability date:** 1 July 1983. **Application procedure:** Send curriculum vitae with a statement of teaching and research interests and three references to: **Dr. Peter J. Bentley, Chairman of Search Committee, School of Veterinary Medicine, North Carolina State University, Raleigh, North Carolina 27606.**

North Carolina State University is an Equal Opportunity/Affirmative Action Employer.

PHYSICAL RESEARCH LABORATORY AHMEDABAD 380 009, INDIA SEEKS PHYSICISTS

The Physical Research Laboratory is a premier research organization in India which is engaged in a wide range of theoretical and experimental research activities in the areas of astronomy, astrophysics, plasma, and nuclear physics. The laboratory has excellent research facilities, including a well equipped library and a computer centre, and is looking for bright motivated physicists with Ph.D. degrees, specialized in these areas. Interested persons may send their résumé to: **The Director**, along with three references.

POSTDOCTORAL FELLOW. Position available in active laboratory working on the mechanisms of metal carcinogenesis. Research areas approaching this problem are diverse: from the level of metal transport into cells and protein binding (metallothionein) to DNA lesions resulting in critical alterations responsible for transformation in cell culture systems. Salary is negotiable depending upon experience, starting at the NIH stipend level. Duration of appointment is 2 years. Send curriculum vitae and names of three references to: **Dr. Max Costa, Department of Pharmacology, University of Texas Medical School at Houston, P.O. Box 20708, Houston, Texas 77025.**

POSTDOCTORAL FELLOW experienced in algal biochemistry to work with polysaccharide and lipid storage products and pigment systems of seaweeds. Position open immediately. Stipend: \$17,000 plus. Send curriculum vitae and names of three references to: **Dr. John H. Ryther, Harbor Branch Institution, Inc., R.R. 1, Box 196A, Fort Pierce, Fla. 33450.** *An Equal Opportunity Employer.*

POSITIONS OPEN

PLANT VIROLOGIST: ASSISTANT OR ASSOCIATE PROFESSOR; 80 percent research, 20 percent teaching; tenure-track. Responsibilities: develop measures to control the economically important virus diseases of wheat, corn, and sorghum, with primary emphasis on wheat. Contribute to the overall teaching program, including a graduate course in plant virology and graduate student training. Qualifications: Ph.D. in plant pathology, with strong records of training and/or research achievement in plant virus identification and characterization, virus-vector relationships, and epidemiology and control of virus diseases.

Send résumé and transcripts and have three letters of reference sent to: **Dr. Fred W. Schwenk, Head, Department of Plant Pathology, Kansas State University, Manhattan, Kans. 66506; telephone: 913-532-6176, before 1 March 1983.** *Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL ASSOCIATE IN PHYSIOLOGY. Department of Physiology, College of Medicine, University of Florida, is seeking applicants for a postdoctoral associate position. Applicants should have completed, or expect to complete in the near future, a Ph.D. or M.D. degree. Experience or interest in perinatal physiology and/or cardiovascular pharmacology desirable, but not necessary. Position funded as part of an NIH research project. Applicants should forward complete curriculum vitae, a short description of research interests, and the names of three individuals who can be contacted for letters of recommendation for immediate consideration to: **S. Cassin, Ph.D., Department of Physiology, Box J274, JHMC, University of Florida, Gainesville, Florida 32610; telephone: 904-392-3791.** Position available 1 July 1983 or earlier. *An Equal Opportunity Employer; women and minorities encouraged to apply.*

POSTDOCTORAL/LIMNOLOGIST POSITION

The Limnology Research Centre, McGill University, invites applications for a 2-year position at C\$17,000 per year. Experimentalists with an interest in predictive field research in nutrient/heavy metal cycling, sediment dynamics, littoral benthic production, or the role of fish in these processes are preferred. Starting date: April or May 1983. Send applications with two letters of reference and a research proposal by 1 March 1983 to: **Dr. J. Kalff, Director, Limnology Research Centre, Department of Biology, McGill University, 1205 Avenue Docteur Penfield, Montreal, Quebec, Canada H3A 1B1.** Telephone: 514-392-4660.

An NIH-funded **POSTDOCTORAL POSITION** is available immediately to study neurotransmitter localization in mammalian retina. Prior experience in immunological or cell culture techniques desired. Send curriculum vitae to:

Dr. P. V. Sarthy
Department of Ophthalmology, RJ-10
University of Washington
Seattle, Washington 98195

An Affirmative Action/Equal Opportunity Employer

POSTDOCTORAL POSITIONS

To participate in ongoing studies of cytochromes and metalloproteins from the mammalian and microbial sources. Preference will be given to candidates with a background in biochemistry, biophysics, inorganic chemistry, or microbiology. Salary range: \$14,000 to \$16,000. Send curriculum vitae and names of three references to: **Dr. David C. Wharton, Department of Biology, Northeastern University, 360 Huntington Avenue, Boston, Mass. 02115.** *Northeastern University is an Equal Opportunity/Affirmative Action/Title IX University.*

POSTDOCTORAL POSITION (readvertised). Immunologist with a background in genetics to work on developing the MHC of a marsupial under the supervision of William H. Stone, who is the Cowles Distinguished Professor at Trinity University, and scientist at the Southwest Foundation for Research and Education. The successful candidate will be appointed as postdoctoral scientist at the Southwest Foundation, and visiting research fellow at Trinity. Minimum salary for the first year is \$17,784 with consideration made for prior relevant postdoctoral experience. Candidates should respond to: **Personnel Manager, Southwest Foundation for Research and Education, P.O. Box 28147, San Antonio, Texas 78284.** Please include curriculum vitae, statement of research experience and interests, and names of three references. *An Equal Opportunity/Affirmative Action Employer.*

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The successful candidate will be responsible for the fulfillment of ADS's contractual commitments to a national client (pharmaceutical and chemical manufacturer). Duties will include:

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Qualifications—a qualified applicant must:

- have a Ph.D. in a modern biology discipline (i.e., Biochemistry, Biophysics, Cell Biology, Genetics, Microbiology, Molecular Biology, etc.)
- be skilled in communicating with management and technical personnel as well as with research workers and consultants within the scientific community.
- be creative, resourceful and capable of great initiative.

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ADS is an aggressive biotechnology company which provides consulting and contract research for industry through cooperation with leading university scientists.

ADS is located in the cultural and intellectual heart of Pittsburgh, the third largest corporate headquarters city in the U.S.

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Qualified applicants should forward their curriculum vitae including references, in confidence to: Dr. Martin P. Ontell, President; Applied DNA Systems, Inc.; Webster Hall; 4415 Fifth Avenue; Pittsburgh, PA 15213.



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Creative BioMolecules is a company engaged in product oriented research in the areas of protein and nucleic acid chemistry. The company has a new laboratory located outside of San Francisco specializing in synthetic DNA and a protein chemistry laboratory in Hopkinton, Massachusetts. We are currently interviewing staff scientist candidates for available positions.

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SYNTHETIC ORGANIC CHEMISTS

MOLECULAR BIOLOGISTS

The MASSACHUSETTS laboratory is recruiting

PROTEIN CHEMISTS

ENZYMOLOGISTS

SYNTHETIC ORGANIC CHEMISTS

Requirements for these positions include a Ph.D. and post doctoral or industrial experience.

In addition to competitive salary and benefits program, these positions offer long term professional growth in a challenging and rewarding environment. Candidates are invited to submit resume to:

Creative BioMolecules
430 Valley Drive
Brisbane, Ca. 94005

Creative BioMolecules
35 South Street
Hopkinton, Ma. 01748

MANAGER

Premium Coal Sample Program

The Chemistry Division of Argonne National Laboratory is seeking candidates for the position of Manager of the newly established Premium Coal Sample Program. The objective of this program is to provide high-quality, well-characterized samples of carefully selected coals to the national scientific community for fundamental research.

The Manager will be responsible for all elements of the Premium Coal Sample Program. These will include program planning; interacting with coal researchers and with laboratory and funding agency management; directing personnel; construction and operation of the processing facility; mining of coals through subcontractors;

processing, characterization, storage and distribution of the coal samples. The Manager will also be responsible for interactions with the coal science community, e.g., through organization of workshops and meetings. As a staff member of the Chemistry Division, the Manager will also have opportunities to conduct research.

Applicants must have an advanced degree in physical or engineering sciences relevant to coal science and expertise in a number of areas of coal research. Administrative experience and familiarity with computerized data base management systems would be highly desirable but not essential.

Persons interested in this position are encouraged to submit their resumes to: Mr. Ronald A. Johns, Manager, Professional Placement, Box D-CHM-9566-55, Argonne National Laboratory, 9700 South Cass Avenue, Argonne, Illinois 60439.



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POSITIONS OPEN

POSTDOCTORAL POSITION starting September 1983 to study the immunology of complement and complement receptor regulation of: (i) lymphocytes and the immune response; (ii) tumoricidal activity of macrophages and NK cells; and (iii) neutrophil and monocyte respiratory burst. Send curriculum vitae and names and telephone numbers of three professional references to: **Dr. Gordon Ross, Division of Rheumatology-Immunology, University of North Carolina, 932 FLOB 231H, Chapel Hill, N.C. 27514.** Awards subject to citizenship eligibility requirements as defined by the granting agency.

An Equal Opportunity/Affirmative Action Employer

POSTDOCTORAL POSITION available immediately for studies of the mechanism of action of insulin and cyclic AMP in cultured cells. Experience in cell culture and molecular biology is desirable. Send curriculum vitae and names and telephone numbers of three references to: **Dr. Daryl K. Granner, Department of Medicine/Biochemistry, The University of Iowa, Iowa City, Iowa 52242.** *An Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION available for a person with background in cell biology and/or protein chemistry to study regulation of hemoglobin acetylation in erythroid colonies, K-562 cell lines, and in cell-free systems. Salary negotiable. Send résumé and two references to: **Dr. E. C. Abraham, Department of Cell and Molecular Biology, Medical College of Georgia, Augusta, Georgia 30912.** *Equal Opportunity/Affirmative Action Employer, M/F.*

POSTDOCTORAL POSITION available March 1983 for study of molecular and biochemical basis of antibiotic resistance in *Streptococcus* spp. Salary range: \$13,200 to \$15,000, depending on experience. Send curriculum vitae and three letters of reference to: **Dr. Vickers Burdett, Department of Microbiology, Box 3020, Duke University Medical Center, Durham, N.C. 27710.** *Duke University is an Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL POSITION Fluorescence Studies of Protein Dynamics

Position available early spring for a Ph.D. experienced in modern luminescence spectroscopy as applied to biomolecules to investigate rapid structural fluctuations of globular proteins. Experience in protein chemistry desirable. Much of the work to be carried out at Bell Laboratories, Murray Hill, New Jersey. Send résumé to: **Dr. A. A. Lamola, Department of Dermatology, College of Physicians & Surgeons, Columbia University, 630 West 168 Street, New York, N.Y. 10032.**

POSTDOCTORAL POSITION available immediately in program studying the regulation of calcium transport in mammalian mitochondria, bioenergetics, and interaction of ions with membranes. Applicants should have Ph.D. in biochemistry; experience in bioenergetics preferred. Send curriculum vitae, names of three references, and short statement of research background to: **Dr. Thomas M. Devlin, Department of Biological Chemistry, Hahnemann University School of Medicine, Philadelphia, Pa. 19102.** *The University is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITIONS available immediately to participate in an established program investigating the role of silicon in biological processes and study in cell cycle of eukaryotes: (i) gene expression, employing DNA cloning; (ii) calmodulin isolation and Ca regulation; (iii) regulation of cAMP-dependent protein kinase; and (iv) polyamine regulation. Experience in methodologies pertinent to above studies required. Salary: \$16,620 to \$18,138 annually. Send curriculum vitae, research experience, reprints, and three letters of reference to: **Dr. B. E. Volcani, University of California, Scripps Institution of Oceanography A-002, La Jolla, Calif. 92093.** *An Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL STAFF FELLOW research positions available in virology on the NIH reservation in spring and fall 1983. Prerequisite: M.D. or Ph.D. equivalent. Two-year appointment. Experience with hepatitis viruses, molecular biology, or virology/immunology desirable. Send curriculum vitae, statement of research goals, and names of references to:

Gerald V. Quinnan, M.D.
Food and Drug Administration
National Center for Drugs and Biologics
Office of Biologics
Division of Virology, HFN-840
8800 Rockville Pike
Bethesda, Maryland 20205
Telephone: 301-496-3144

POSITIONS OPEN

POSTDOCTORAL/RESEARCH ASSOCIATE position available immediately. Opportunities for in vitro and in vivo studies of islet architecture and function and/or hypothalamic-hypophyseal-ovarian axis in diabetes. New laboratory facilities with RIA, immunocytochemistry, quick-freeze fixation, TEM, SEM, perfusion, perfusion, tissue culture, cell dispersion, and computer facilities available. Salary: \$16,800 per annum. If interested, send curriculum vitae and names of three references to:

Dr. Carl R. Morgan
Professor and Chairman
Department of Anatomy
School of Medicine
East Carolina University
Greenville, N.C. 27834

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POSTDOCTORAL RESEARCH ASSOCIATE—IMMUNOLOGY

Immediate position available for Ph.D. in immunology to study mechanisms of blood transfusion induced prolongation of organ transplant survival. Experience in cellular immunology, serology, cloning, and basic immunocytochemistry desirable. Position initially for 1 year, renewable for at least 2 years. Salary: approximately \$18,000 to \$20,000, commensurate with experience.

Send résumé and three letters of reference to:

Dr. Hans W. Sollinger
Department of Surgery
Clinical Science Center
600 Highland Avenue
Madison, Wis. 53792

Affirmative Action/Equal Opportunity Employer

POSTDOCTORAL RESEARCH ASSOCIATE

Position available immediately to study structural determinants of growth hormone insulin interactions and biological consequences. Techniques in protein chemistry membrane hormone receptors and membrane transport employed. Send curriculum vitae and three letters of recommendation to: **Dr. Martin Sonenberg, Memorial Sloan-Kettering Cancer Center, 1275 York Avenue, New York, N.Y. 10021.**

PROTEIN STRUCTURE CHEMIST

Sequence analysis of lymphokines. Postdoctoral or staff scientist level, depending on experience. Position available immediately. Applicants should have Ph.D. and publications in protein sequence analysis. Laboratory is equipped with gas phase sequencer and other current equipment for microsequence work.

Send résumé and names of three references to:

Thomas P. Hopp, Ph.D.
Immunex Corporation
51 University Street, Suite 600
Seattle, Wash. 98101

RESEARCH PHYSICIST

The Department of Radiology, Hospital of the University of Pennsylvania, invites applications for a research position in medical imaging instrumentation. The successful applicant should have a Ph.D. or equivalent and at least 3 years of experience in nuclear physics and/or nuclear medicine research with a strong experimental background. He/she will join a group of investigators in developing advanced gamma-ray and positron imaging instruments for nuclear medicine. Submit curriculum vitae to: **Gerd Muehlechner, Ph.D., Department of Radiology, Hospital of the University of Pennsylvania, 3400 Spruce Street, Philadelphia, Pa. 19104.** *The University of Pennsylvania is an Equal Opportunity/Affirmative Action Employer.*

VASCULAR PLANT SYSTEMATIST. The Department of Botany, Washington State University (WSU), is seeking applications for a tenure-track assistant professor level position in systematic botany to begin September 1983. The appointee will be expected to maintain a vigorous research program in vascular plant systematics, direct graduate students research, and teach at the undergraduate and graduate levels. Applicants should send curriculum vitae documenting research and teaching ability, a statement of current research interests and plans, up to three reprints if available, and copies of transcripts, and arrange to have three letters of reference sent by 1 March 1983 to: **Dr. Amy Jean Gilmartin, Systematist Search Committee, Botany, WSU, Pullman, Wash. 99164-4230.** *Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

RESEARCH ASSISTANT

Norden Laboratories, subsidiary of SmithKline Beckman Corp. and leader in the animal health industry, has an immediate opening in our research and development area. As an important member of one of our biological research teams, the research assistant will be responsible for laboratory work in the area of molecular biology.

Applicants should have an M.S. degree in microbiology, molecular genetics, or biochemistry; or a B.S. degree plus research experience.

In addition to an attractive starting salary and monthly cost-of-living adjustments, Norden offers a comprehensive benefit package that is one of the finest in the industry. Interested applicants should send a résumé (including salary requirements) in confidence to: **Connie Soucie,**

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RESEARCH ASSOCIATE IN NEUROSCIENCE in program devoted to the study of the functional organization and connectivity of parietal association cortex in monkeys, to participate in single-neuron recording and antidromic activation experiments designed to determine the axonal projection targets of functionally identified posterior parietal neurons. Will also have the opportunity to participate in axon transport studies of the connectivity of parietal association cortex. Background in single-cell neurophysiology or primate behavior preferred. Experience with animal surgery, neuroanatomical techniques, and/or small computers desirable. Starting date: summer 1983. Salary: \$13,380 to \$15,468, depending on experience. Send curriculum vitae, brief description of research experience and interest, and names of three references to: **Dr. James C. Lynch, Department of Anatomy, University of Mississippi Medical Center, Jackson, Mississippi 39216;** telephone: 601-987-5717. *An Equal Opportunity/Affirmative Action Employer.*

RESEARCH FACULTY POSITIONS IN OCEANOGRAPHY UNIVERSITY OF SOUTHERN CALIFORNIA (USC)

Applications are invited for three research faculty positions. Individuals with established records of excellence in sea-going research programs in biological, geological, chemical, and physical oceanography are sought. At least one appointment each in geological and biological oceanography is planned. Individuals applying should have coastal oceanography as their major geographical area of interest. Special attention would be given to applications from interdisciplinary teams, for example, in benthic boundary layer studies, interaction of plankton and circulation, chemical/biological transformations, and so forth. These positions carry a commitment of up to 50 percent of salary from USC sources. Appointments are expected to be made by 1 July 1983. Contact:

Dr. Richard Dugdale, Director
Allan Hancock Foundation
University of Southern California
Los Angeles, Calif. 90089-0372
or
Dr. Robert Douglas, Chairman
Department of Geological Sciences
University of Southern California
Los Angeles, Calif. 90089-0741

USC is an Equal Opportunity/Affirmative Action Employer.

VIROLOGIST

The Department of Microbiology and Immunology, University of North Carolina (UNC), School of Medicine, Chapel Hill, invites applications from outstanding individuals for a tenure-track position in the area of virology. Rank will be directly dependent upon individual's education and experience. We seek an individual of demonstrated research productivity and teaching ability with a research program in the molecular and biochemical aspects of viral replication or pathogenesis. Position available fall 1983. *The University of North Carolina is an Equal Opportunity/Affirmative Action Employer. We encourage applications from and nominations of minority and female candidates: such persons may identify themselves voluntarily.* Reply by 15 March 1983 with curriculum vitae and names and addresses of references to: **P. Frederick Sparling, M.D., 804 Faculty Laboratory Office Building, UNC, Chapel Hill, N.C. 27514.**

The MX Missile and the Strategic Balance of Power

A collection of recent articles from SCIENCE on contemporary strategic ideology is now available for use by professionals, teachers, and researchers interested in the nuclear arms race.

"Anyone seeking a better understanding of the MX debate would do well to look at [this] series of brief, clearly written analyses."

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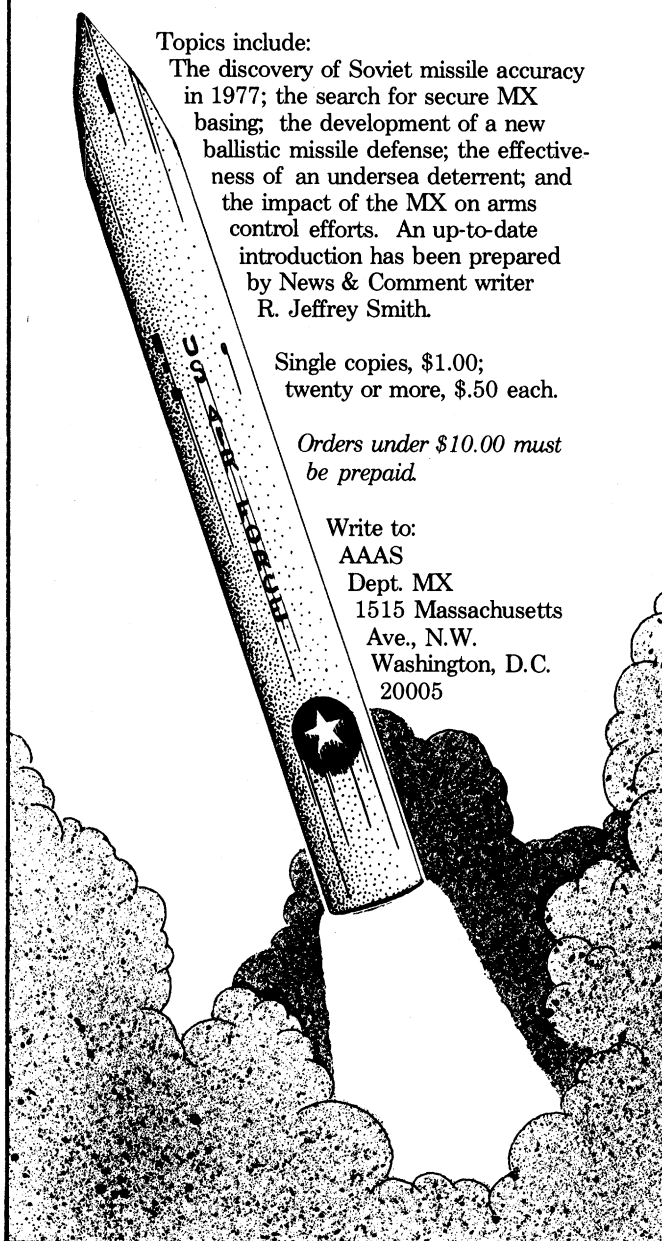
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POSITIONS OPEN

RESEARCH ASSOCIATE—PLANT PHYSIOLOGY/BIOCHEMISTRY. An individual is sought to participate in the characterization of the enzymatic steps involved in lysine synthesis in cereal crops. Requirements: Ph.D. with at least 2 years of post-doctoral research experience in the following areas: protein isolation, purification and characterization, enzymology, plant nitrogen and amino acid metabolism, and culture of bacterial and plant cells. Qualified applicants should send references and résumé to: **Dr. R. R. Henke, Department of Botany, University of Tennessee, Knoxville, Tenn. 37996. Equal Opportunity Employer.**

RESEARCH ASSOCIATE

Non-invasive corneal redox fluorometry to study relationship between corneal metabolism and active transport, cell migration, and wound healing and aging in perfused cornea, animal and human studies. Ph.D. in biochemistry, biophysics, or physiology required. Experience in instrumentation and computerized data acquisition desired. Send résumé to: **Susan Oak, Department of Ophthalmology, L-914, Boston University School of Medicine, 80 East Concord Street, Boston, Mass. 02118.**

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WORKSHOPS

Workshops in DNA Sequencing. Bethesda Research Laboratories (BRL) scientists teach Maxam-Gilbert and Sanger "dideoxy" methods in 3-day workshops. Included are lectures, hands-on experiments and demonstrations. Sequencing strategies and unpublished tips are discussed. Current schedule: 9 to 11 February, University of Colorado, Denver; 3 to 5 March, LSU Medical Center, New Orleans. For information about these and future dates, call: **Jill George, BRL, at 800-638-4045 or 301-840-8000.**

2ND INTERNATIONAL WORKSHOP ON MOLECULAR ELECTRONIC DEVICES

13 to 15 APRIL 1983
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Contributions are solicited from active workers who are concerned with events at the "molecular" or moiety level in any area of physical science. The workshop will explore the possibilities of developing switches at the molecular level for ultimately controlling and modifying signals. The variety of signals might include electrons, protons, phonons, solitons, excitons, and photons.

For further information, those interested in actively participating in this workshop should contact immediately:

Dr. Forrest L. Carter
Chemistry Division, Code 6175
Naval Research Laboratory
Washington, D.C. 20375
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GRADUATE STUDY AT WASHINGTON STATE UNIVERSITY. Teaching and research assistantships are available for the M.S. and Ph.D. degrees in our new pharmacology/toxicology program. Areas of research include pharmacology, aquatic and mammalian toxicology, medicinal chemistry, pharmacokinetics, and others. Enjoy the beautiful Pacific Northwest. Write: **Dr. G. S. Yost, College of Pharmacy, Washington State University, Pullman, Wash. 99164-6510. An Equal Opportunity Employer.**

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GRADUATE ASSISTANTSHIPS IN BIOCHEMISTRY leading to the Ph.D. degree are available for the 1983-1984 academic year to qualified applicants. The department has a challenging academic and vigorous research program in a broad range of biochemical disciplines. Stipends for 12-month appointments begin at \$7700. Write: **Dr. William P. Kolb, Department of Biochemistry, The University of Texas Health Science Center at San Antonio, San Antonio, Texas 78284. An Equal Opportunity/Affirmative Action Employer.**

SYMPOSIA

SECOND ANNUAL SPINA BIFIDA RESEARCH SYMPOSIUM. Investigators with basic, applied, and/or clinical research project dealing with spina bifida or related conditions are encouraged to submit abstracts to the Spina Bifida Association of America Research Symposium to be held in Orlando, Florida, on 16 June 1982. For further information, contact: **Dr. C. J. Sherry, P.O. Box 5291, Bryan, Texas 77805.**

HOW TO MAKE MICROCAPSULES, A HANDS-ON COURSE. A 3-day laboratory course designed to teach the art and science of microcapsule making. Suitable for biologists, pharmacists, chemists, life scientists and engineers. Enrollment limited to nine. Lectures and laboratory sessions by Dr. Curt Thies, Professor of Chemical Engineering at Washington University in St. Louis. Three spring sessions: 15 to 17 March, 12 to 14 April, and 16 to 18 May. For information, telephone: **314-889-6014 or 6066.**

FELLOWSHIPS

GRADUATE FELLOWSHIPS IN BIOMEDICAL AND PHYSICAL SCIENCES

| | | |
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Well-funded faculty with diverse interests. Good post-graduation placement record. Above average stipends include full payment of tuition. Contact: **The Graduate School (A), University of Alabama in Birmingham, Birmingham, Ala. 35294; telephone: 205-934-7110.**

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Dr. Kevin J. Eckelberger
Postdoctoral Program
Harbor Branch Institution, Inc.
RR 1, Box 196-A
Fort Pierce, Florida 33450
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RESEARCH FELLOWSHIP. Postdoctoral research fellowship available from 1 January 1983 for 2 or 3 years in the areas of psychopharmacology and drugs of abuse in the Ensor Foundation Research Laboratory of the William S. Hall Psychiatric Institute, Columbia, South Carolina. Candidate is required to have Ph.D. degree in pharmacology with zero to 2 years of postdoctoral experience in psychopharmacology, neuropharmacology, or neurochemistry with training in radioreceptor assay, radioimmunoassay of peptide hormones and neurotransmitters, use of stereotaxic instruments. The salary range is \$16,000 to \$18,000. William S. Hall Psychiatric Institute is affiliated with the University of South Carolina, School of Medicine, and functions as part of the Department of Neuropsychiatry and Behavioral Science. Contact: **Nandkumar S. Shah, Ph.D., Chief of Research Services, William S. Hall Psychiatric Institute, P.O. Box 202, Columbia, South Carolina 29202.**

SPECIAL GRADUATE FELLOWSHIP will be awarded to an outstanding graduate student applicant to Molecular Biology Graduate Program, University of Arizona. Stipend of \$8000 first year. Out-of-state tuition waiver. Available academic year 1983-1984. Apply in writing to: **Dr. John Spizizen, Department of Molecular and Medical Microbiology, University of Arizona, Tucson, Ariz. 85724.**
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FELLOWSHIPS Ph.D., MEDICAL SCIENCES

Specialties in anatomy, biochemistry, microbiology, neurosciences, pathology, pharmacology, physiology, radiology, or other medical sciences with the possibility of a joint or interdisciplinary concentration. For Predoctoral Fellowship Awards, apply to: **Dr. L. J. A. DiDio, Dean of the Graduate School, Medical College of Ohio, C.S. 10008, Toledo, Ohio 43699.**

FELLOWSHIPS

Herbert H. Jasper Postdoctoral Research FELLOWSHIP in Neuroscience available. Position provides first year's salary and use of exceptional facilities. Recipient works closely with investigator of choice, within a large multidisciplinary group studying the vertebrate nervous system. Further information and application forms available from: **Fellowship Committee, Centre de recherche en sciences neurologiques, Faculté de médecine, Université de Montréal, C.P. 6128, Succ. A, Montréal, Québec, Canada H3C 3J7. Deadline: 28 February 1983.**

St. Jude Children's Research Hospital Division of Pathology POSTDOCTORAL RESEARCH FELLOWSHIP

Applications are invited for the position of post-doctoral research fellow to work in the characterization of human leukemic cells and solid tumors of childhood using monoclonal antibodies. The 1-year position is available 1 September 1983 and can be renewed for a second year. Candidates should have a Ph.D. or M.D. (or equivalent) and should have previous experience in tissue culture and immunological techniques.

Salary will be dependent upon qualifications and experience.

Applicants should send curriculum vitae and the names of three references to: **Dr. Stephen C. Peiper, Division of Pathology, St. Jude Children's Research Hospital, 332 North Lauderdale, P.O. Box 318, Memphis, Tennessee 38101.**

DREXEL FELLOWSHIPS IN BIOMEDICAL ENGINEERING AND SCIENCE. These fellowships are supported by the Calhoun Endowment to Drexel University. Students can specialize in the following areas: artificial organs; bioinstrumentation; biomedical imaging and signal processing; biomedical science; biomaterials; biomedical systems and control; cardiovascular dynamics; diagnostic ultrasound; electrodes; heart assist devices; and rehabilitation engineering. Each fellowship provides a minimum of \$7500 tax-free stipend for a 12-month appointment plus waiver of tuition and fees beginning fall 1983. Deadline for application: 1 March 1983. For application, write: **Dr. Dov Jaron, Director, Biomedical Engineering and Science Institute, Drexel University, Philadelphia, Pa. 19104.**

POSTDOCTORAL FELLOWSHIPS IN CHEMISTRY AND BIOLOGY OF PROTEIN AND PEPTIDE HORMONES (2 or 3 years), beginning July 1983 or earlier.

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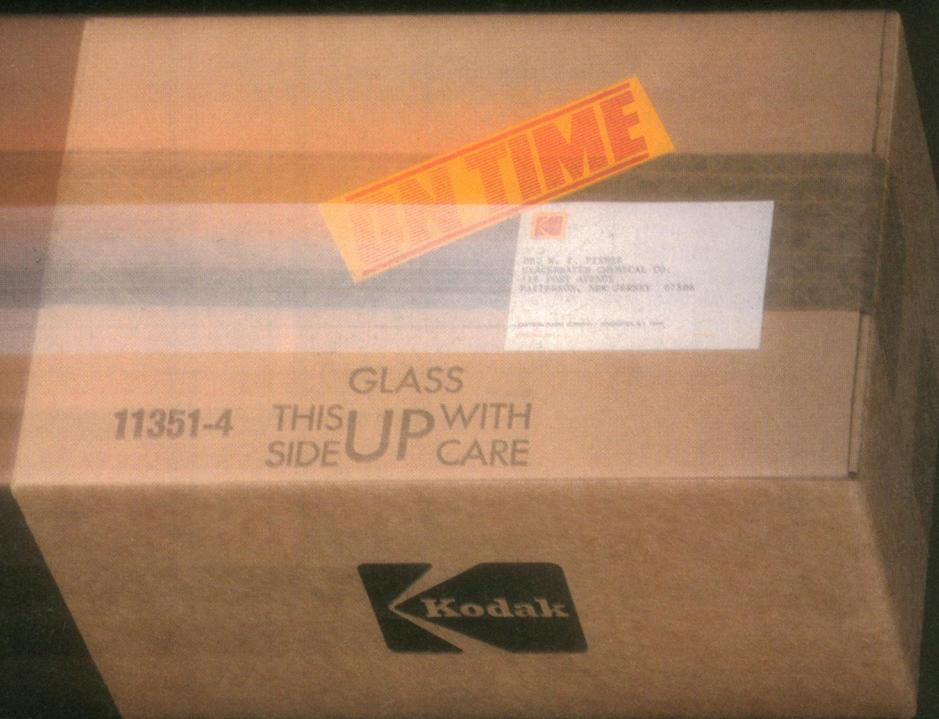
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